

Spring Pheasant Surveys 2001

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Abstract

Survey results indicate that pheasant numbers will be lower this fall than in 2000. Forty-six crowing rooster pheasant surveys were conducted this past spring to monitor pheasant population trends throughout Wisconsin's pheasant management counties. In addition to an estimation of populations, these surveys also provide evaluation of wild pheasant restoration projects, including Iowa and Jilin F1 release areas, the Dodge County Private Lands Project, the Glacial Habitat Restoration Area and various cooperative habitat projects using Pheasant Stamp, Wings Over Wisconsin, and Pheasants Forever funds. The 2001 pheasant crow counts indicate a statewide average of approximately 1.8 roosters per mile², a 25% decrease from 2000.

Methods

Sex Ratio Surveys--Winter sex ratios were used to extrapolate hen densities from spring crowing rooster counts. In past years, observers searched winter concentration areas and recorded the number of roosters and hens seen in order to develop area-specific sex ratios. Unfortunately, due to budget and personnel constraints, pheasant flushing surveys have not been conducted in many years. In areas where sex-ratio surveys have not been conducted for many years, the sex ratio was assumed to be the long-term average in the Dodge County Project (2.5 hens/rooster).

Crowing Cock Surveys--Spring pheasant surveys were conducted during April and May. Observers initiated their transects approximately 45 minutes before sunrise and usually finished within 1-1.5 hours after sunrise. Observers listened for 3 minutes at stops 0.5 miles apart along the transects and marked locations of crowing roosters on plat maps. Surveys were only conducted when winds were less than 10 miles per hour. Throughout the Dodge County Project area, the GHRA and the GHRA control area, the mean of two counts was used to achieve the roosters per mile² index. In the other areas, surveys were run twice and the higher of the two counts are used for comparison. On a few routes, a crowing survey was conducted only once. Survey routes that were not conducted this year were eliminated from the statistical analysis process.

Hen Indices--To get a clearer picture of population trends, hen indices were developed for each area. The hen index is the product of the number of roosters heard per mile² and the estimate of hens per rooster in that area. These density indices are likely underestimates of the actual density because some roosters are not heard during the surveys.

Results

Overall, 2001 surveys indicate a decline in spring crowing rooster pheasant density with a state survey mean of 1.8 roosters per mile² compared to 2.4 roosters per mile² in 2000. Of the 51 crowing cock surveys run, only 46 were used in the 2001 totals because of incomplete route information. Of the routes run, 18% increased (n=8), 67% (n=31) declined and 2% (n=1)

showed no change when compared to the 2000 counts. Of the 46 routes, 13% (n=6) could not be compared to 2000 data due to incomplete data collected that year. A 22% decrease is illustrated in the mean hen index, with 2001 results indicating 5.2 hens/mi² compared to 6.7 hens/mi² 2000.

Dodge County Project--The Dodge County Project was initiated in 1984 to evaluate the effectiveness of private land habitat management and development in areas that have satisfactory winter cover and remnant pheasant populations. Nesting cover and food plots were developed in a two-mile radius around six different major pheasant wintering areas. Although the management phase of this project concluded in 1994, surveys continue to be conducted to monitor pheasant populations.

Spring surveys indicated an overall 51% population decrease in the 5 Dodge County survey areas. The previous 2 years showed an increase in the hen index in this survey area (Figure 1). All routes showed a decline this year from 20-79% (Table 1).

The 2001 hen index data indicates that hen densities are below the long-term average for Dodge County, with this year's index at 3.4 hens/mile² and the long-term average at 6.1 hens/mile² (Figure 1).

Glacial Habitat Restoration Area—The Glacial Habitat Restoration Area (GHRA) is a habitat improvement program initiated in 1990 focused on purchasing, easing and improving wildlife habitat through scattered parcels of property in 24 townships in parts of Winnebago, Fond du Lac, Dodge, and Columbia Counties. The GHRA covers 530,000 acres in these counties. Wetland and grassland restoration projects focused on improving habitat for pheasants and other upland and wetland wildlife species are conducted throughout the project area. The goal of the project is to restore 11,000 acres of drained wetlands and 38,000 acres of grasslands within the area's boundaries. With increased cuts in personnel and management dollars throughout the project area, an increased backlog of properties requiring upland conversion and wetland restoration has developed.

The department's wildlife program is continuing to invest pheasant stamp funds as well as federal NAWCA grant dollars in the GHRA to further habitat development work in these areas. Population indices on the GHRA surveyed areas averaged 24% lower than in 2000, with a range for individual surveys of -60% to +50% (Table 1).

The 2001 hen index data indicates that hen numbers are below the long-term average for the Glacial Habitat Restoration Area, with this year's index at 3.3 hens/mile² and the long-term average at 4.5 hens/mile² (Figure 2).

GHRA Control Areas-- GHRA control area surveys are conducted in order to compare areas which are a part of the habitat work in the Habitat Restoration Area and those that are not receiving Pheasant Stamp dollars for habitat restoration. The GHRA control areas are surveys are run with 2 routes in each survey area, and each survey is run twice. The number of roosters per mile² decreased in these units by 17% to 1.4 roosters per mile², down from the 2000 average of 1.7 roosters per mile² (Table 1). The mean hen index in the GHRA Control Area is 3.6 hens/mile² this is an 18% decrease from 4.4 hens/mile² in 2000.

Other Control Areas--In order to effectively evaluate the Iowa and Jilin F1 projects, department personnel in conjunction with Wings Over Wisconsin and Pheasants Forever

members ran surveys on control areas in St. Croix, Rock, Jefferson, and Polk counties. These areas have generally had recent habitat improvements due to CRP or pheasant stamp projects, but they have not received wild bird releases. The number of roosters per mile² decreased in these units 12% to 4.0 roosters per mile², down from the 2000 average of 4.5 roosters per mile² (Table 1). The mean hen index in these survey routes is 13.3 hens/mile² this is a 10% decrease from 14.9 hens/mile² in 2000 (Figure 4).

Iowa Pheasant Release Areas— Three new project areas received Iowa pheasant releases starting in 2000. These new areas are Green Lake County-Markesan F1 area, Manitowoc County-Centerville area, and Eau Claire County-Clear Lake area. This is the first year survey data from these areas are being used in our analysis.

The average number of roosters per mile² in the Iowa Pheasant Release Areas declined 10% to 1.9 roosters per mile² in 2001 (Table 1). The one-year change in the numbers of roosters per mile² in the fifteen Iowa F1 release areas ranged from a decline of 60% in the Rock/Dane County-Union Township release area to an increase of 167% in Winnebago County-Rat River release area. Due to incomplete surveys, not all routes were considered in calculating the totals. When making a comparative analysis, this fact must be considered. The 2001 hen index data indicates that hen numbers are slightly above the long-term average for the Iowa Pheasant Release Areas, with this year's index at 5.2 hens/mile² and the long-term average at 5.1 hens/mile² (Figure 5).

Jilin (Manchurian) Pheasant Release Areas— The number of roosters per mile² decreased 34% in the Jilin Pheasant Release Area (1.1 roosters per mile², down from the 2000 average of 1.6 roosters per mile² (Table 1). The number of roosters per mile² ranged from 0.5 in the Manitowoc-2 Rivers/2 Creeks areas to 2.1 in the Dunn County-Muddy Creek W.A. release. Not all Jilin release routes were run in 2001.

The 2001 hen index data indicates that hen numbers are below the long-term average for the Jilin Pheasant Release Areas, with this year's index at 2.5 hens/mile² and the long-term average at 5.8 hens/mile² (Figure 6).

Discussion

Statewide 2001 crowing count results show a decline of 25% in crowing indices. A 22% decrease was recorded in the mean hen index, with 2001 results indicating 5.2 hens/mi². Scattered population changes typically cannot be pinpointed to one cause; however, some effects may include isolated weather conditions, land use changes, or crowing count survey or surveyor discrepancies. This year throughout much of the state, winter temperatures were normal and snow depths were normal. Most of the snow occurred in December causing some tough conditions for pheasants and other wildlife. The widespread decline may be the result of a tough winter coupled with average to below average recruitment in 2000.

This year, wet spring conditions throughout the state may have a negative effect on recruitment. Data gathered from the 10-week brood surveys should give a better indication of 2001 production. Past research from Wisconsin has shown that weather during prenesting is the biggest factor in year-to-year population fluctuation. However, the intense rains in the state in late May and early June and the cool early June temperatures may have a negative impact on 2001 recruitment.

Although survey information is published yearly, it is important to remember that **long-term**

trends and comparison to **long term averages** are more valuable than year-to-year or area-to-area comparisons. Each year, the surveys are conducted by different individuals. These surveyors may not have the same experience as another and may not hear all of the crowing roosters or may “double-count” some roosters. However, long-term annual index changes for many areas with a similar treatment should provide good indications of the direction of population trends for these treatment areas. The long-term trend in pheasant populations currently looks positive relative to the 1980’s with a statewide hen index of 5.2 hens/mile² in 2001 and a long-term average of 5.5 hens/mile². Habitat work and the creation of pheasant stamp funds in 1991 must be benefiting the pheasants because after two consecutive poor breeding springs and a tough winter, the pheasant population is still near the long term average. More emphasis is needed on habitat development, management, and maintenance to ensure stable pheasant populations in the future.

Table 1. Relative change in 2001 pheasant crowing cock densities and hen indices relative to 2000 results.

Project	Unit	Method	Roosters per mi ² '00	Roosters per mi ² '01	% Change for Roosters	Hens/ Cock	Hen Index '00	Hen Index '01	%Change for Hens
	Dodge County								
	Elba	Mean 2 cts.	4.3	2.2	-49%	2.5	10.8	5.5	-49%
	Calamus	Mean 2 cts.	1.9	0.4	-79%	2.5	4.8	1.0	-79%
	Trenton	Mean 2 cts.	1.3	0.9	-31%	2.5	3.3	2.3	-31%
	Clyman	Mean 2 cts.	1.0	0.8	-20%	2.5	2.5	2.0	-20%
	Fountain Prairie	Mean 2 cts.	5.2	2.4	-54%	2.5	13.0	6.0	-54%
Dodge Co. Mean			2.7	1.3	-51%		6.9	3.4	-51%
<u>GHRA</u>									
	Winnebago-Pumpkinseed	Mean 2 cts.	0.4	0.5	25%	2.5	1.0	1.3	25%
	Winnebago-Waukau	Mean 2 cts.	0.2	0.3	50%	2.5	0.5	0.8	50%
	Winnebago-Pickett	Mean 2 cts.	1.8	1.5	-17%	2.5	4.5	3.8	-17%
	Fond du Lac-Ripon	Mean 2 cts.	2.8	1.6	-43%	2.5	7.0	4.0	-43%
	Fond du Lac-Rosendale Cntr.	Mean 2 cts.	1.6	1.8	13%	2.5	4.0	4.5	13%
	Fond du Lac-Silver Creek	Mean 2 cts.	1.4	0.8	-43%	2.5	3.5	2.0	-43%
	Fond du Lac-Eldorado	Mean 2 cts.	3.1	3.1	0%	2.5	7.8	7.8	0%
	Fond du Lac-Ladoga	Mean 2 cts.	N/A	2.0	N/A	2.5	N/A	5.0	N/A
	Dodge-Alto	Mean 2 cts.	2.2	1.0	-55%	2.5	5.5	2.5	-55%
	Dodge-Fox Lake	Mean 2 cts.	2.0	0.8	-60%	2.5	5.0	2.0	-60%
	Dodge-Randolph	Mean 2 cts.	1.7	1.2	-29%	2.5	4.3	3.0	-29%
	Columbia-Courtland	Mean 2 cts.	1.8	1.1	-39%	2.5	4.5	2.8	-39%
GHRA Mean			1.7	1.3	-24%		4.3	3.3	-24%
<u>GHRA Controls</u>									
	Columbia-Otsego	Mean 2 cts.	2.8	1.4	-50%	2.5	7.0	3.5	-50%
	Columbia-Hampden	Mean 2 cts.	2.6	3.2	23%	2.5	6.5	8.0	23%
	Columbia-Lebanon	Mean 2 cts.	1.3	0.6	-54%	2.5	3.3	1.5	-54%
	Green Lake-Puckyan	Mean 2 cts.	1.6	1.4	-13%	2.5	4.0	3.5	-13%
	Dodge-Ashippun	Mean 2 cts.	0.4	0.6	50%	2.5	1.0	1.5	50%
GHRA Control Mean			1.7	1.4	-17%		4.4	3.6	-18%
<u>Other Controls</u>									
	St. Croix-New Richmond	2 cts/1 wy*	2.4	2.3	-4%	8.43	20.2	19.4	-4%
	Rock-West Beloit	2 cts/1 wy*	1.6	1.5	-6%	2.7	4.3	4.1	-6%
	Jefferson-Oakland^	2 cts/1 wy	0.8	1.2	50%	2.5	2.0	3.0	50%
	Polk	2 cts/1 wy	13.2	10.8	-18%	2.5	33.0	27.0	-18%
Other Controls Mean			4.5	4.0	-12%		14.9	13.3	-10%

Iowa F1 Releases

88-90	Rock/Dane - Union Township	2 cts/1 wy	0.5	0.2	-60%	8.43	4.2	1.7	-60%
88-90	Iowa - Western	2 cts/1 wy	1.8	1.5	-17%	2.5	4.5	3.8	-17%
91-92	Green-North Monroe	2 cts/1 wy*	N/A	4.0	N/A	2.4	N/A	9.7	N/A
91-93	St. Croix-Boardman	2 cts/1 wy*	1.5	1.3	-13%	8.4	12.6	10.9	-13%
94-96	Manitowoc-Collins	2 cts/1 wy*	1.8	1.0	-44%	2.5	4.5	2.5	-44%
94-96	Walworth-Spring Prairie	1ct/1wy*	1.4	N/A	N/A	2.5	3.5	N/A	N/A
94-96	Columbia-Springvale	2 cts/1 wy*	1.6	0.9	-44%	2.5	4.0	2.3	-44%
94-96	Dodge-Mayville	2 cts/1 wy	0.9	N/A	N/A	0.52	0.5	N/A	N/A
96-98	Grant - Clifton Township	2 cts/1 wy*	4.1	2.4	-41%	2.5	10.3	6.0	-41%
96-98	Dodge-Beaver Dam1	2 cts/1 wy	2.6	2.0	-23%	2.5	6.5	5.0	-23%
97-99	Iowa - Eastern	2 cts/1 wy	3.2	2.5	-22%	2.77	8.9	6.9	-22%
97-99	Sheboygan Marsh	2 cts/1 wy	2.1	1.3	-38%	1.49	3.1	1.9	-38%
97-99	Pepin/Dunn	2 cts/1 wy*	4.3	3.4	-21%	2.5	10.8	8.5	-21%
97-99	Winnebago-Rat River	2 ct/ 2 wy+	0.9	2.4	167%	2.5	2.3	6.0	167%
00-02	Green Lake-Markesan F1	1 ct/ 1 wy	N/A	1.8	N/A	2.5	N/A	4.5	N/A
00-02	Manitowoc-Centerville	2 cts/ 1 wy	N/A	1.5	N/A	2.5	N/A	3.8	N/A
00-02	Eau Claire-Clear Creek	2 cts/ 1 wy	N/A	1.6	N/A	2.5	N/A	4.0	N/A
Iowa F1 Mean			2.1	1.9	-10%		5.8	5.2	-11%

Jilin F1 Releases

92-93	Dane-EDHRA	2 cts/1 wy	1.5	0.9	-40%	1.71	2.6	1.5	-40%
92-94	Dunn Co.-Muddy Creek W.A.	2 cts/1 wy*	2.4	2.1	-13%	2.5	6.0	5.3	-13%
92-94	Green Lake-Markesan	2 cts/1wy	3.7	N/A	N/A	2.5	9.3	N/A	N/A
92-94	Fond du Lac-Waupun	2 cts/1 wy#	N/A	0.9	N/A	3.1	N/A	2.8	N/A
92-94	Jefferson-Waterloo	1 ct/1 wy	1.1	0.9	-18%	1.89	2.1	1.7	-18%
93-95	Ozaukee-Belgium	2 cts/2 wys	N/A	N/A	N/A	1.9	N/A	N/A	N/A
93-95	Sheboygan-Holland	2 cts/2 wys	0.6	N/A	N/A	1.9	1.1	N/A	N/A
95-97	Manitowoc-2 Rivers/2 Creeks	2 cts/1 wy*	0.4	0.5	25%	2.5	1.0	1.3	25%
Jilin F1 Mean			1.6	1.1	-34%		3.7	2.5	-32%
State Mean			2.4	1.8	-25%		6.7	5.2	-22%

* Survey method in 2000 was 2 cts/2 wys

+ Survey method in 2000 was 1 ct/2 wys

Survey method in 2000 was 1 ct/1 wy

^ 2000 data updated

N/A Incomplete data for the project area

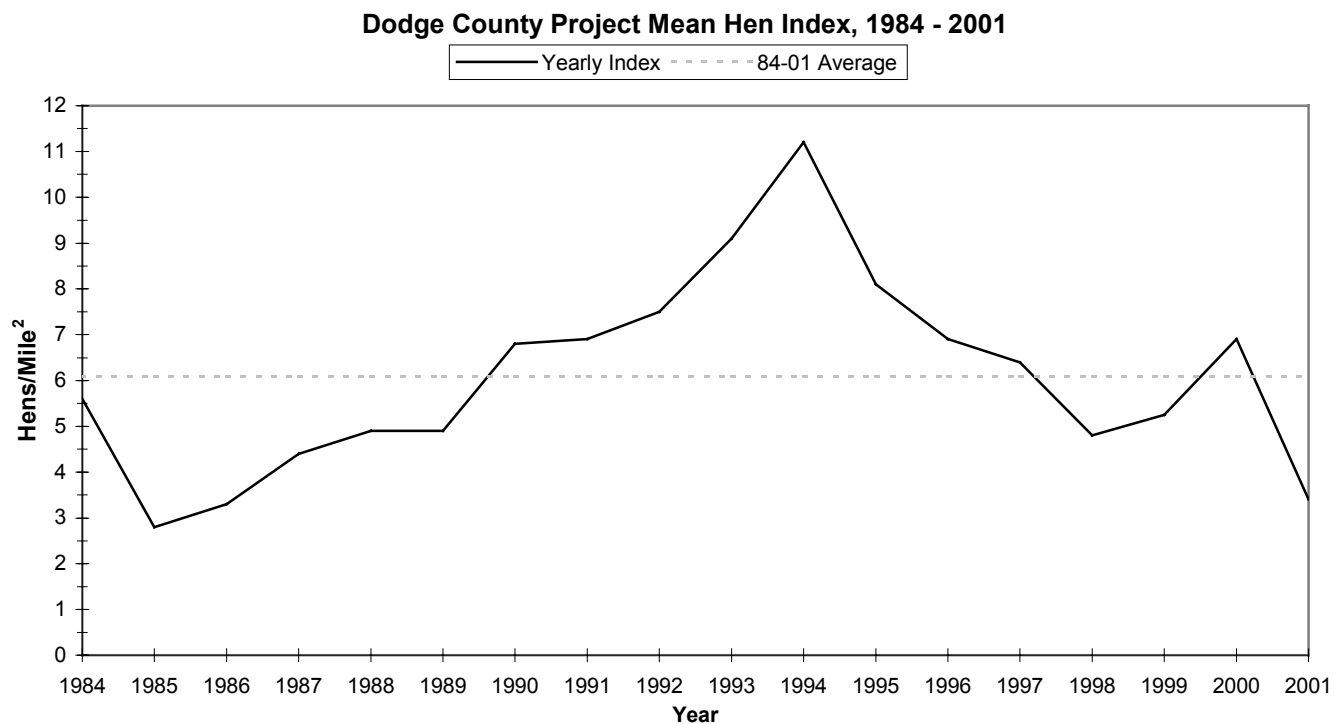


Figure 1. Mean pheasant hen indices (cocks heard/square mile x hens/cock) on study areas of the Dodge County Private Lands Project, 1984-01.

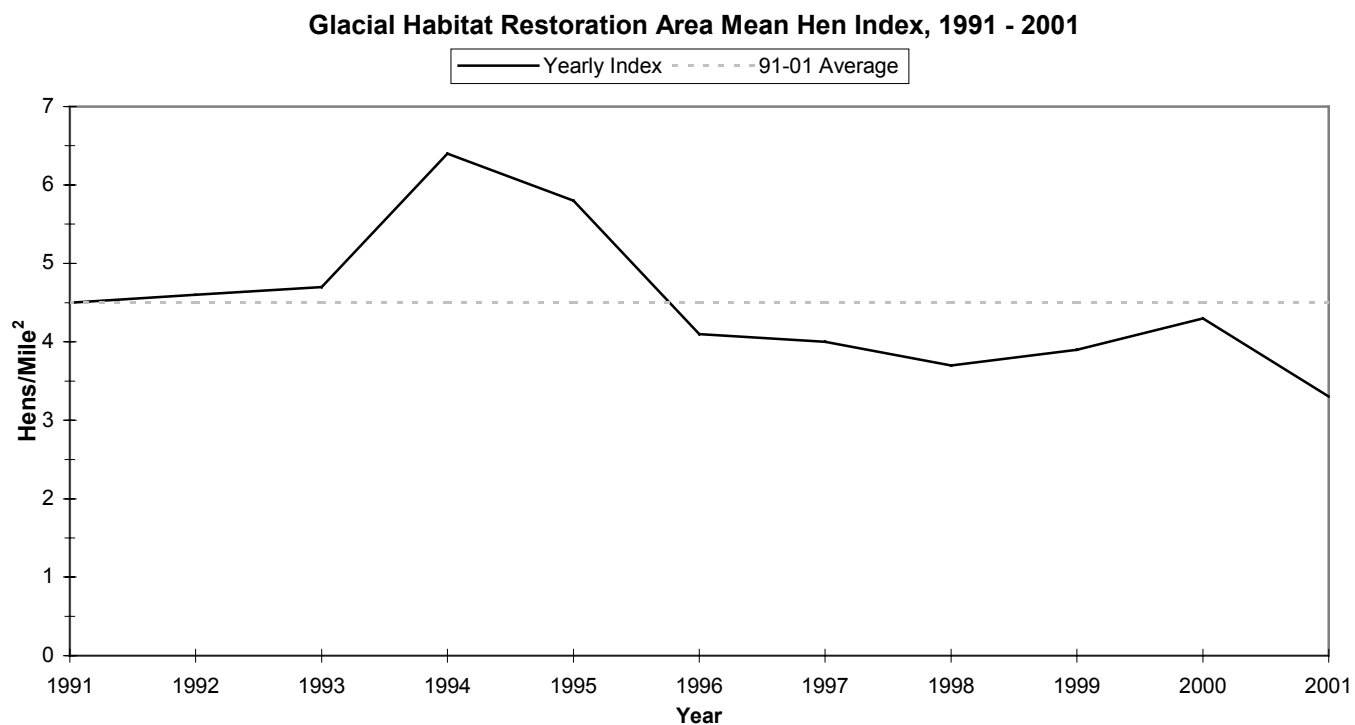


Figure 2. Pheasant hen indices (cocks heard/square mile x hens/cock) on the Glacial Habitat Restoration Area, 1991-2001.

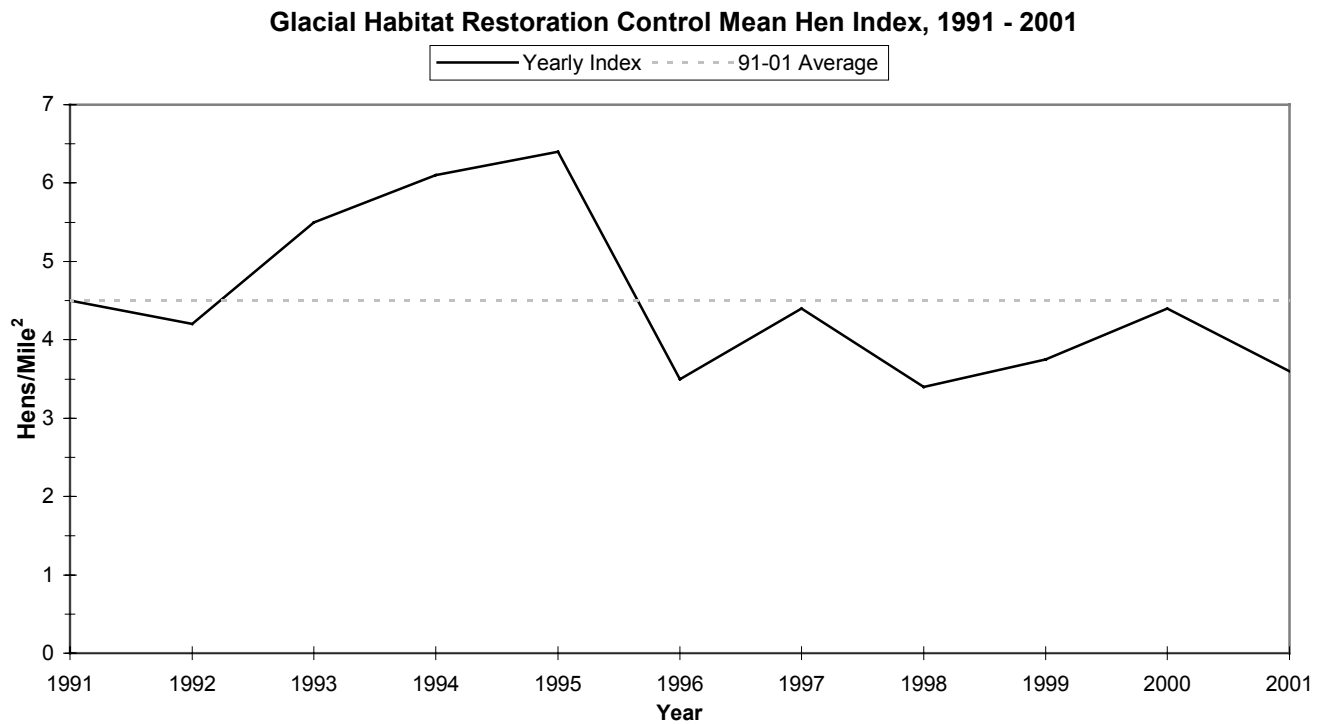


Figure 3. Mean pheasant hen indices (cocks heard/square mile x hens/cock) on GHRA control areas, 1991-2001.

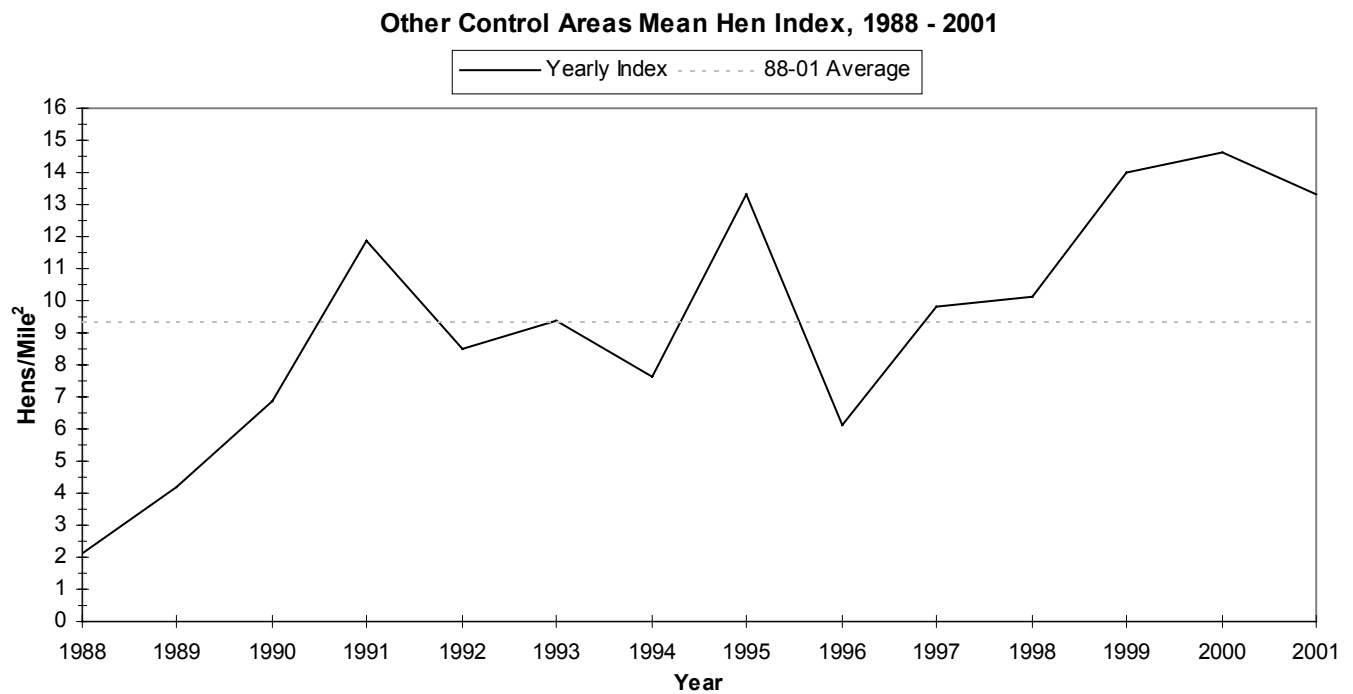


Figure 4. Mean pheasant hen indices (cocks heard/square mile x hens/cock) on control areas around Wisconsin, 1988 -2001.

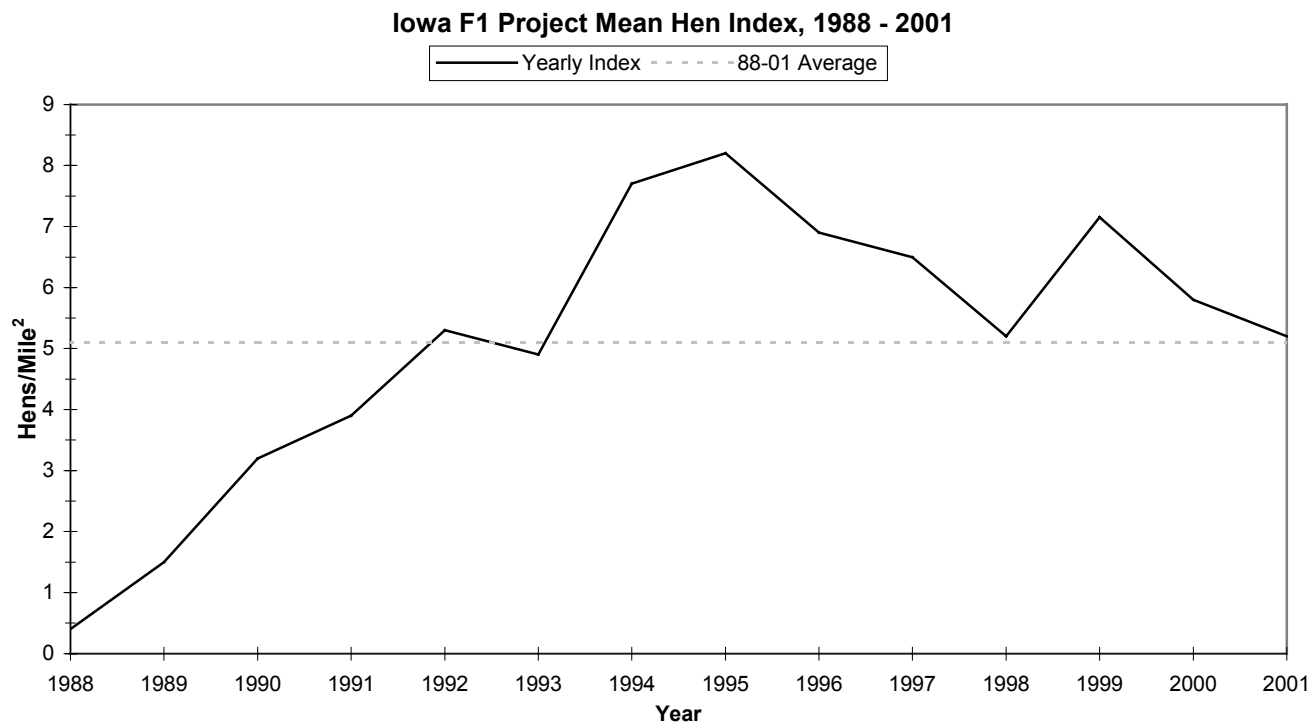


Figure 5. Mean pheasant hen indices (cocks heard/square mile x hens/cock) on Iowa F1 pheasant release sites, 1988 -2001.

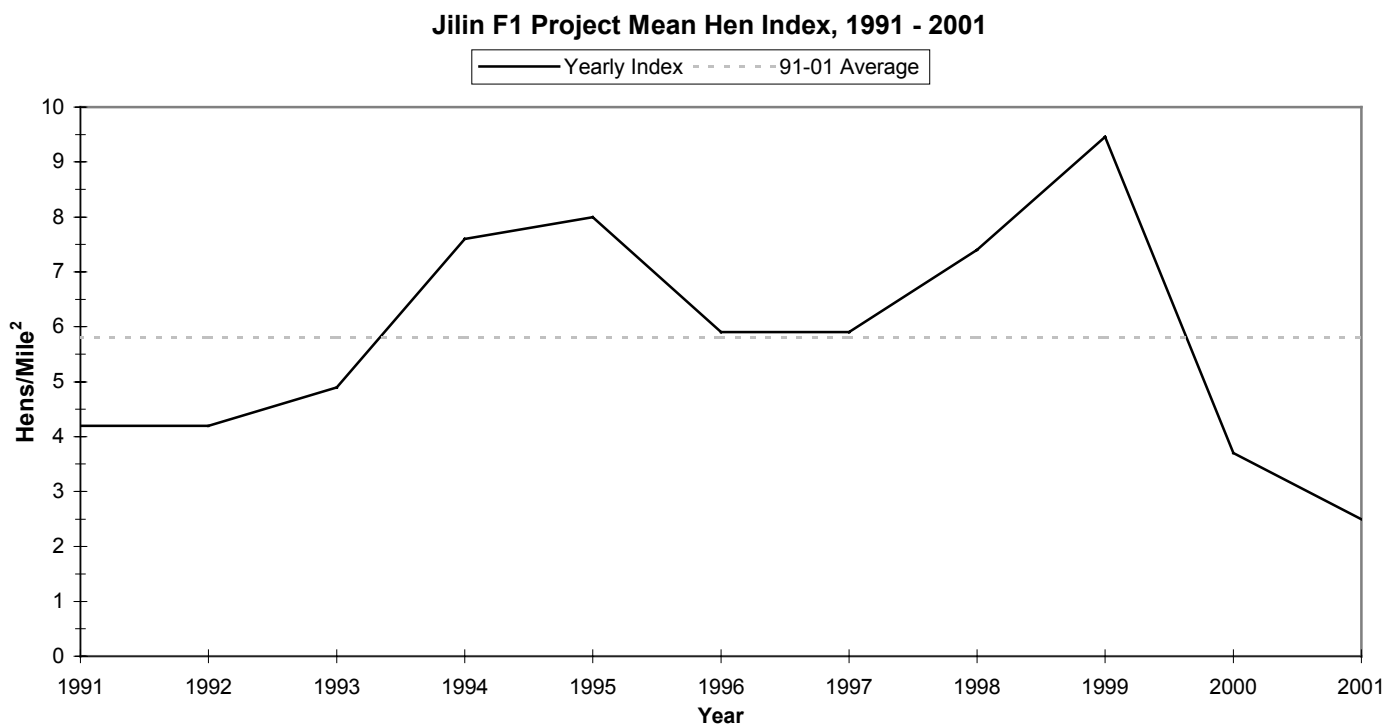


Figure 6. Mean pheasant hen indices (cocks heard/square mile x hens/cock) on Jilin F1 pheasant release sites, 1991-2001.

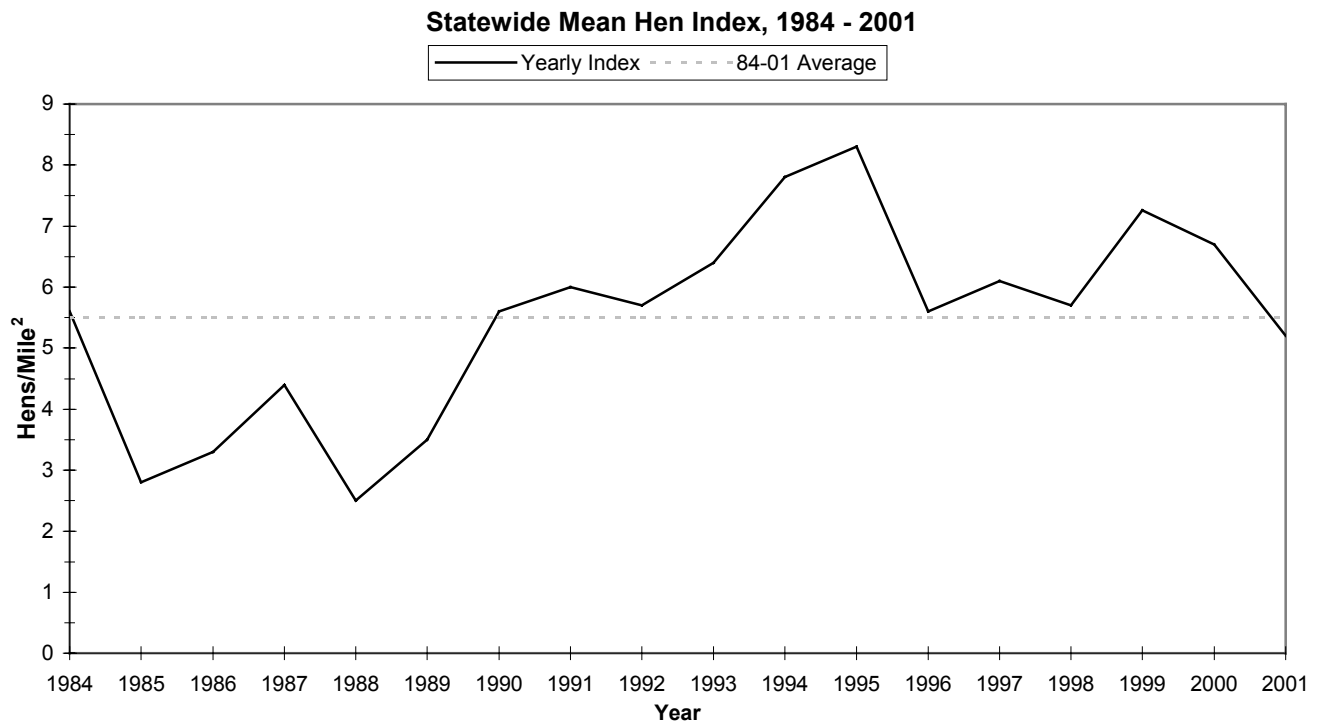


Figure 7. *Statewide pheasant hen indices (cocks heard/square mile x hens/cock), 1984-01.*